



**US Army Corps
of Engineers**

Code Forum

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CEMP-C

Subject: Dynamic Fire Dampers

Applicability: Information

Reference: Corps of Engineers Guide Specification (CEGS) 15895, Air Supply, Distribution, Ventilation, and Exhaust System
National Fire Protection Association (NFPA) 90A, Installation of Air Conditioning and Ventilating Systems
Underwriters Laboratories (UL)-555, Standard For Fire Dampers and Ceiling Dampers

Discussion: Specification section 15895 states "Fire dampers shall be 1-1/2 hour fire rated unless otherwise indicated. Fire dampers shall conform to the requirements of NFPA 90A and UL-555. Fire dampers shall be automatic operating type and shall have a dynamic rating suitable for the maximum air velocity and pressure differential to which it will be subjected". Contract requirements for location, installation and testing of fire dampers will be discussed below.

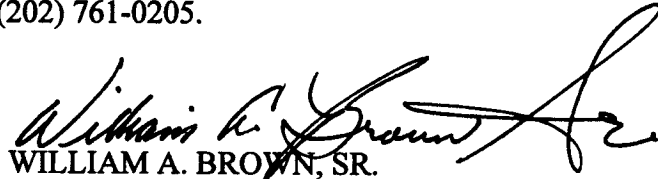
1. Approved fire dampers shall be provided in all air transfer openings in fire rated partitions. See NFPA 90A 1993 edition paragraph 3-3.1.2.
2. Fire dampers shall be installed at each direct or ducted opening into or out of fire rated enclosures or shafts. See NFPA 90A 1993 edition paragraph 3-3.4.4.
3. Where air ducts extend through only one floor and serve only two adjacent stories, the air ducts shall be enclosed or fire dampers shall be installed at each point where the floor is penetrated. See NFPA 90A 1993 edition paragraph 3-3.2.
4. The NFPA requires fire dampers where HVAC ducts or other openings penetrate walls or partitions having fire resistance rating of 2 hours or more. NFPA 90A requires Underwriters Laboratories (UL) labeled and classified fire dampers as follows:
 - a. One and one-half hour classified dampers are appropriate for use in walls, partitions, shafts, transfer grilles and floors having fire resistance ratings of less than 3 hours.
 - b. Three hour classified fire dampers are appropriate for use in walls, partitions, shafts, transfer grilles and floors having fire resistance ratings of 3 hours or more.
 - c. No fire damper is acceptable for protecting openings in fire rated ceilings unless specially classified as a CEILING FIRE DAMPER.

5. A UL-555 and NFPA 90A label indicates the fire damper has been tested and meets code requirements. The fire damper shall be installed per the approved or listed installation drawing.

6. Dynamic automatic closing type fire dampers are designed and tested specifically for fire induced closure under air flow to meet UL-555 standards. These dampers are suited to dynamic fire control systems designed with fans and HVAC Systems that remain operational in the event of fire. Each damper label includes the UL-555 Dynamic Rating, which indicates the maximum air velocity, in FPM, and static pressure, in Inches of W.G., the damper will close against. Make sure your contractor is installing labeled Dynamic Fire Dampers and the dynamic rating meets the contract requirements.

7. Dynamic Fire Dampers shall be operated, prior to building occupancy, to determine that they function in accordance with the requirements of NFPA 90A. During fire damper operation extreme pressure may occur upstream and downstream of closing damper. To help reduce pressure access door should be located upstream of fire damper. If access door for the fire damper is located downstream of the damper, a pressure relief door shall be provided upstream of the fire damper. Relief door shall be properly sized to relieve positive pressure when the damper is closed.

This Code Forum has been coordinated with Engineering Division, (CEMP-ET). If you have any questions my point of contact is CEMP-CE (202) 761-0205.



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